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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,103	09/09/2003	Alice L. Donaldson	FIS920030174	2102

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EXAMINER

KIK, PHALLAKA

ART UNIT	PAPER NUMBER
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2825

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/605,103	Applicant(s) DONALDSON ET AL.	
	Examiner Phallaka Kik	Art Unit 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22,26-28 and 30 is/are allowed.
- 6) ☒ Claim(s) 1,7-9,15 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 2-6,10-14,16-18,23-25 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/9/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Actions responds to the Application and IDS filed on 9/9/2003.

Claims 1-30 are pending.

Claim Objections

2. **Claims 1-14,17,19-21,23-25,29** are objected to because of the following informalities:

As per **claim 1**, "the steps" (line 3) should be --steps-- for proper antecedent basis.

As per **claim 3**, "the step" (line 1) should be --a step-- for proper antecedent basis.

As per **claim 4**, "the group" (line 2) should be --a group-- for proper antecedent basis.

As per **claims 5-6,8**, "the step" (line 1) should be --a step-- for proper antecedent basis. Also, as per **claim 8**, "the same" (line 5) should be --a same-- for proper antecedent basis.

As per **claims 2-9**, the claims are also objected to for incorporating the above errors into the respective claims by claim dependency.

As per **claim 10**, "the steps" (line 2) should be --steps-- for proper antecedent basis.

As per **claim 12**, "the same" (line 7) should be --a same-- for proper antecedent basis.

As per **claims 13-14**, "the step" (line 1) should be --a step-- for proper antecedent basis.

As per **claims 11-14**, the claims are also objected to for incorporating the above errors into the respective claims by claim dependency.

As per **claim 17**, "the group" (line 2) should be --a group-- for proper antecedent basis.

As per **claim 19**, "removing program code" (lines 1-2) should be --program code configured to remove-- for greater clarification and for proper antecedent basis.

As per **claim 20**, "the same" (line 4) should be --a same-- for proper antecedent basis.

As per **claim 21**, "removing program code" (lines 1-2) should be --program code configured to remove-- for greater clarification and for proper antecedent basis.

As per **claim 23**, "generating program code" (lines 2-3) should be --program code configured to generate-- for greater clarification and for proper antecedent basis.

As per **claim 24**, "removing program code" (lines 1-2) should be --program code configured to remove-- for greater clarification and for proper antecedent basis; "the same" (line 7) should be --a same-- for proper antecedent basis. The claim is also objected to for incorporating the above errors into the claim by claim dependency.

As per **claim 25**, "the group" (line 2) should be --a group-- for proper antecedent basis.

As per **claim 29**, "the same" (line 7) should be --a same-- for proper antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1,7-9,15,19-21** are rejected under 35 U.S.C. 102(b) as being anticipated by **Schaper** (US Patent Application Publication No. 2001/0047588).

As per **claims 1,15**, the activating of the a substantial portion of the grid points of intended mesh plane corresponds to connecting/interconnecting the conductive regions to form the dual mesh planes (see paragraphs [0019]-[0020]), wherein the removing of the at least one active line is further described in paragraphs [0066]-[0067], wherein the mesh plane being defined on a field of grid points is illustrated in Fig. 7, and wherein the computer program product comprising a computer useable medium having computer program code are part of the CAD implemented method as described in paragraphs [0020] and [0026], being necessary to implement the CAD implemented method.

As per **claims 7-9,19-21**, all of the elements of claims 1 and 15, from which the respective claims depend, are discussed in the rejection of claims 1 and 15 above, wherein all of the elements of the claims are within the scope of **Schaper**

since the removing step of **Schaper** allows for selective removal of various conductive regions, including those with and without vias and being identified by the grid point(s) (see paragraphs [0021], [0066]-[0067], [0085], [0099]-[0100]).

Allowable Subject Matter

5. **Claims 22,26-28,30** are allowed.
6. **Claims 2-6,10-14,16-18,23-25,29** are respectively objected due to as being dependent upon a rejected base claim and/or due to the noted informalities set forth in this Office Action, but would be allowable if claims 2-6,10-14,17,23-25,29 are rewritten or amended to overcome objections due to the noted informalities, and if claims 2, 3 and 16 are rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter:

As per **claim 2**, the claim recites the inventive features of doubling the density of the intended mesh plane as part of the activating step which includes filling the substantial portion of grid points of the intended mesh with active lines, as part of the method of generating a mesh plane for an IC carrier design, as claimed, which the prior arts made of record failed to teach or suggest. In particular, although **Schaper** teaches the filling of the substantial portion of the grid points of the intended mesh plane with active lines (i.e., conductors), **Schaper** teaches that the density actually decreases instead of doubling as claimed (see paragraph [0085]-[0087]). Other prior arts made of record similarly failed to teach or suggest the inventive features as claimed.

Accordingly, the claimed invention is novel and un-obvious over the prior arts made of record.

As per **claims 3-6,10-14,16-18,22-30**, the dependent claims 3 and 16 and the independent claims 10,22,27, from which the respective claims depend, recite the inventive steps/program code/means for storing a set of active lines of the mesh plane as a multiple line shape, as part of the method/computer program product/IC carrier design system for generating a mesh plane for an IC carrier design, as claimed, which the prior arts made of record failed to teach or suggest. In particular, the prior arts made of record teach various methods/systems for generating mesh plane, including the removal of active line(s) to generate the mesh (see **Schaper**, US Patent Application Publication No. 2001/0047588, especially Fig. 7 and paragraphs [0019]-[0021], [0066]-[0067], [0085], [0099]-[0100]; **Nguyen et al.**, US Patent Application Publication No. 2005/0039154, especially paragraphs [0021], [0046], [0050]; **Gupta et al.**, US Patent Application Publication No. 2002/0023779, especially paragraphs [0008]-[0010], [0018]). However, none of the prior arts made of record teach or suggest the inventive steps/program code/means as claimed. Accordingly, the claimed invention is novel and un-obvious over the prior arts made of record.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Therefore, Applicant is requested herein to consider them carefully in response to this Office Action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phallaka Kik whose telephone number is 571-272-1895. The examiner can normally be reached on Monday-Thursday, 8:30AM-7PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Phallaka Kik
U.S. Patent Examiner
October 25, 2005